

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
24 June 2004 (24.06.2004)

PCT

(10) International Publication Number
WO 2004/054313 A3

(51) International Patent Classification⁷: **H04S 3/00**

(21) International Application Number: **PCT/IB2003/005785**

(22) International Filing Date: 4 December 2003 (04.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/431,435 6 December 2002 (06.12.2002) US

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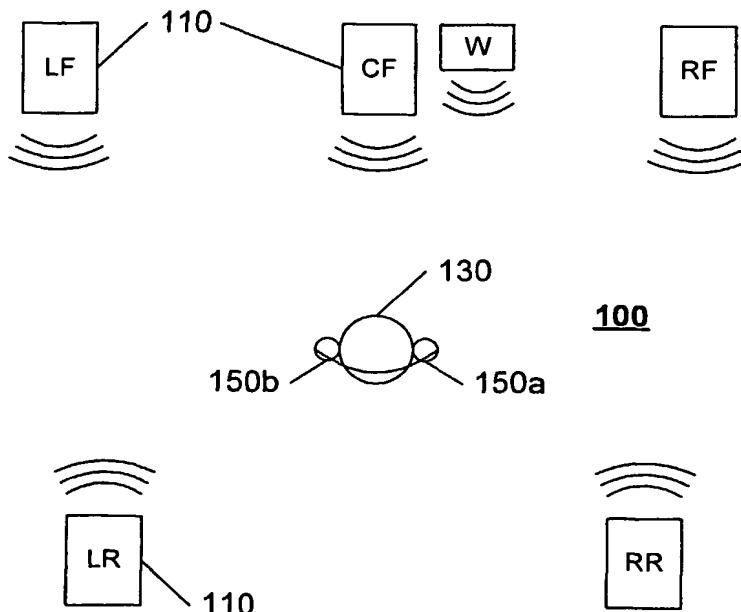
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(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: PERSONALIZED SURROUND SOUND HEADPHONE SYSTEM



(110) in the user's particular environment.

(57) Abstract: A system and method determines parameters (170) for rendering headphone audio information, based on a user's preferred acoustic rendering in a non-headphone environment. A user configures a loudspeaker-based system for a preferred ambiance. Microphones (150) on a head-mounted device then detect the audio signals received by the user in this environment. These detected signals are compared to the audio information that is being provided by the user's audio system and the differences are used to characterize the user's particular environment. Based on this characterization, when the user uses a headphone device (250) to listen to the audio information, a headphone driver (260) modifies the audio information to produce audio signals at the speakers in the user's headphone (250) to effectively reproduce the audio signals that would have been produced at the user's ears by the loudspeakers

**Declaration under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK,*

EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
10 September 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

ational Application No

PCT/IB 03/05785

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04S3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04S

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/49066 A (KONINKL PHILIPS ELECTRONICS NV) 5 July 2001 (2001-07-05) page 2, line 1 - page 3, line 21 page 10, line 6 - line 21 page 12, line 30 - page 13, line 17 figures 2-4,7 -----	1-20
X	WO 02/078389 A (SCHOBEN DANIEL W E ; KONINKL PHILIPS ELECTRONICS NV (NL)) 3 October 2002 (2002-10-03) the whole document -----	1-20
A	US 4 739 513 A (YOSHIMI TOSHIKAZU ET AL) 19 April 1988 (1988-04-19) column 7, line 1 - column 8, line 26 column 11, line 38 - line 57 figures 9,19 -----	1-20
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Patent family members are listed in annex.

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Date of the actual completion of the international search

2 July 2004

Date of mailing of the International search report

12/07/2004

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

ational Application No

PCT/IB 03/05785

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 02/071797 A (BAR ON AMIR ; BE4 LTD (IL); COHEN YUVAL (IL); LEVY HAIM (IL); NAVEH GI) 12 September 2002 (2002-09-12) page 11, line 6 – page 12, line 9 -----	1-20

INTERNATIONAL SEARCH REPORT

Information on patent family members

national Application No

PCT/IB 03/05785

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
WO 0149066	A 05-07-2001	WO 0149066	A2	05-07-2001
		EP 1201101	A2	02-05-2002
		JP 2003518890	T	10-06-2003
		US 2003190047	A1	09-10-2003
WO 02078389	A 03-10-2002	EP 1371266	A2	17-12-2003
		WO 02078389	A2	03-10-2002
		US 2003123676	A1	03-07-2003
US 4739513	A 19-04-1988	JP 60254997	A	16-12-1985
		JP 1797135	C	28-10-1993
		JP 5003928	B	18-01-1993
		JP 61108214	A	26-05-1986
		JP 2018020	C	19-02-1996
		JP 7054998	B	07-06-1995
		JP 61108294	A	26-05-1986
		DE 3580402	D1	13-12-1990
		EP 0165733	A2	27-12-1985
WO 02071797	A 12-09-2002	CA 2439587	A1	12-09-2002
		EP 1374633	A2	02-01-2004
		WO 02071797	A2	12-09-2002